

OWNER'S MANUAL

VIDEO CASSETTE RECORDER **CF5494**

CROSLEY



IF YOU NEED ADDITIONAL ASSISTANCE FOR SET-UP OR OPERATING AFTER READING OWNER'S MANUAL, PLEASE CALL TOLL FREE
1-800-242-7158 (EASTERN TIME 9:00AM ~ 4:30PM)

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Please read before using this equipment

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

**CAUTION**

RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The important note is located on the rear of the cabinet.

THIS SYMBOL INDICATES THAT DANGEROUS VOLTAGE CONSTITUTING A RISK OF ELECTRIC SHOCK IS PRESENT WITHIN THIS UNIT.

THIS SYMBOL INDICATES THAT THERE ARE IMPORTANT OPERATING AND MAINTENANCE INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE APPLIANCE.

IMPORTANT SAFEGUARDS

1. Read Instructions - All the safety and operating instructions should be read before the appliance is operated.

2. Retain Instructions - The safety and operating instructions should be retained for future reference.

3. Heed Warnings - All warnings on the appliance and in the operating instructions should be adhered to.

4. Follow Instructions - All operating and use instructions should be followed.

5. Cleaning - Unplug this video product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

EXCEPTION: A product that is meant for uninterrupted service and that for some specific reason, such as the possibility of the loss of an authorization code for a CATV converter, is not intended to be unplugged by the user for cleaning or any other purpose, may exclude the reference to unplugging the appliance in the cleaning description otherwise required in item 5.

6. Attachments - Do not use attachments not recommended by the video product manufacturer as they may cause hazards.

7. Water and Moisture - Do not use this video product near water, for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.

8. Accessories - Do not place this video product on an unstable cart, stand, tripod, bracket, or table. The video product may fall, causing serious injury to a child or adult, and serious damage to the appliance. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the video product. Any mounting of the appliance should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

9. Ventilation - Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the video product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the video product on a bed, sofa, rug, or other similar surface. This video product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

10. Power Sources - This video product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply in your home, consult your appliance dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.

11. Grounding or Polarization - This video product is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

12. Power Cord Protection - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

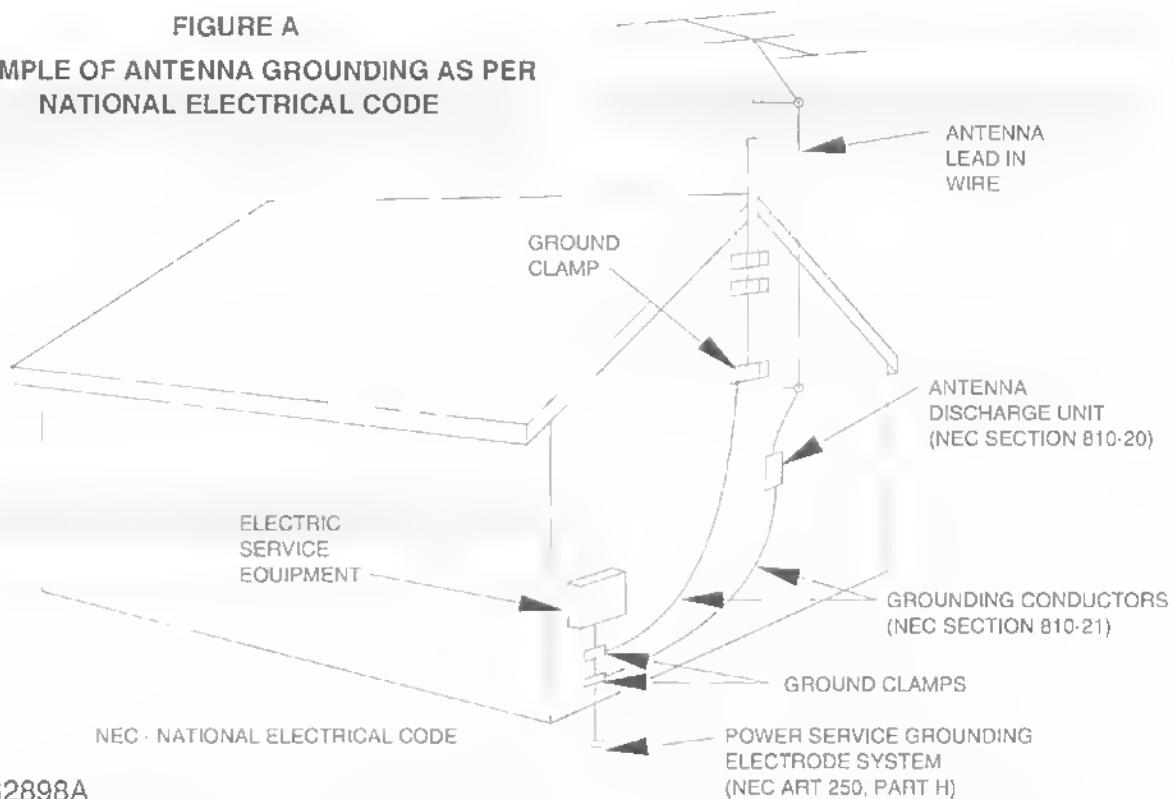
13. Outdoor Antenna Grounding - If an outside antenna or cable system is connected to the video product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of

PORTRABLE CART WARNING
(Symbol provided by RETAC)



S3126A

FIGURE A
**EXAMPLE OF ANTENNA GROUNDING AS PER
 NATIONAL ELECTRICAL CODE**



S2898A

antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. (Fig. A)

14. **Lightning** For added protection for this video product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the video product due to lightning and power-line surges.
 15. **Power Lines** An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
 16. **Overloading** Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
 17. **Object and Liquid Entry** Never push objects of any kind into this video product through any openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the video product.
 18. **Servicing** Do not attempt to service this video product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
 19. **Damage Requiring Service** Unplug this video product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
- a. When the power-supply cord or plug is damaged.
 - b. If liquid has been spilled, or objects have fallen into the video product.
 - c. If the video product has been exposed to rain or water.
 - d. If the video product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the video product to its normal operation.
 - e. If the video product has been dropped or damaged in any way.
 - f. When the video product exhibits a distinct change in performance; this indicates a need for service.
 20. **Replacement Parts** When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.
 21. **Safety Check** Upon completion of any service or repairs to this video product, ask the service technician to perform safety checks to determine that the video product is in proper operating condition.
 22. **Heat** This video products should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

PRECAUTIONS

LOCATION

For safe operation and satisfactory performance of your VCR, keep the following in mind when selecting a place for its installation:

- Shield it from direct sunlight and keep it away from sources of intense heat.
- Avoid dusty or humid places.
- Avoid places with insufficient ventilation for proper heat dissipation. Do not block the ventilation holes at the top and bottom of the VCR. Do not place the unit on a carpet because this will block the ventilation holes.
- Install unit in a horizontal position.
- Avoid locations subject to strong vibration.
- Do not place the VCR near strong magnetic fields.
- Do not move the unit from a cold to a hot place or vice versa.

AVOID THE HAZARDS OF ELECTRICAL SHOCK AND FIRE

- Do not handle the power cord with wet hands.
- Do not pull on the power cord when disconnecting it from AC wall outlet. Grasp it by the plug.
- If, by accident, water is spilled on your VCR, unplug the power cord immediately and take the unit to a Funai Authorized Service Center for servicing.
- Do not put your fingers or objects into the VCR cassette holder.
- Do not place anything directly on top of the VCR.

WARNING

Moisture condensation may occur inside the unit when it is moved from a cold place to a warm place, or after heating a cold room or under conditions of high humidity. Do not use the VCR until its inside is dry.

FCC WARNING- This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

IMPORTANT COPYRIGHT INFORMATION

Unauthorized recording or use of broadcast television programming, video tape, film or other copyrighted material may violate applicable copyright laws. We assume no responsibility for the unauthorized duplication, use or other acts which infringe upon the rights of copyright owners.

The serial number of this product may be found on the back of the VCR. No others have the same serial number as yours. You should record the number and other vital information here and retain this book as a permanent record of your purchase to aid identification in case of theft.

Date of Purchase _____

Dealer Purchase from _____

Dealer Address _____

Dealer Phone No. _____

Model No. _____

CF5494

Serial No. _____

FEATURES

- **Rotary 4-head Record /Playback System—** Rotary 4-heads to ensure excellent picture quality and special effects playback.
- **Hi-Fi System—** The newly developed Hi-Fi stereo recording system offers you super sound quality with a dynamic range of 80dB and frequency response from 20Hz to 20kHz and 0.005% wow and flutter.
- **Auto Power On and Off system—** Automatically turns the VCR on as you insert the cassette, and turns off after auto-rewind, ejects when reaches beginning of the tape.
- **Automatic Rewind—** Automatically rewinds at the end of the tape except during timer recording.
- **Auto Repeat—** Let you set the VCR to automatically repeat a tape when it reaches the end.
- **Auto Tracking—** Adjusts the tracking automatically for each tape you play.
- **Three Different Record/Playback Speeds—** Select the Standard Play (SP mode), Long Play (LP mode) or Super Long Play (SLP mode) for up to eight hours of recording/playback with a T-160 tape.
- **Automatic Playback Speed Selection—** Automatically selects the proper playback speed.
- **1 Year, 8 events (including Today, Daily and Weekly Timer Recording)—** The built-in timer allows you to record up to 7 programs at different times on different channels up to 1 year in advance. The Today Timer Recording feature uses program number 8. The daily timer allows recordings to be made of daily broadcasts, and the weekly timer allows recording to be made once a week up to the end of the tape.
- **Today Timer Recording—** Allows you to easily record one program within 24 hours.
- **OTR (One Touch Recording)—** Instant timed recording from 30 to 480 minutes is possible at the push of OTR button.
- **Rental Play Mode—** Improves playback picture quality of worn tapes, especially rental tapes.
- **2 Step Picture Search Operation—** You may view a video program at a high speed or super high speed in either a forward or reverse direction in LP and SLP mode.
- **STILL—** "Freeze" the picture at any time, for close viewing of a particular scene.
- **181 Channel Capability PLL Frequency Synthesizer Tuner with Direct Station Call—** (A converter may be necessary to view scrambled CATV channels.)
- **Infrared Remote Control—** Allows you to use most of the controls from a remote location.
- **Real Time Tape Counter—** This shows the elapsed recording or playback time in hours, minutes, and seconds. The “—” indication will appear when the tape is rewound further than the tape counter position "0:00:00".
- **Direct Button Operation—** When a tape is in the VCR and the power is off, just pressing PLAY, REWIND or F.FWD button on the main unit will automatically turn on the VCR and playback, rewinding or fast-forwarding will start immediately.
- **On-Screen-Programming—** All major operating and programming functions appear on your TV screen for operating convenience.
- **On Screen Display (OSD) with English/Spanish selectable Screens**
- **Time Search—** Let you set the VCR to advance the tape by entering the desired playback time you want to skip.
- **Blank Search—** Let you set the VCR to search for an unrecorded portion on the tape.
- **Index Search—** Index the start of a recording.
- **Edit Search—** Let you set the VCR to edit an unwanted segment of a recording.
- **Just-In-Time Recording—** Measures the remaining tape and automatically adjusts the tape speed so that the automatic timer recording fits on a cassette.
- **Tape Remainder—** You can check the remaining running time of your tape.
- **Slow Motion—** You can view the video program at a slower than normal playback speed. Slow speed can be controlled by pressing SLOW + button (faster) or SLOW - button (slower).

SUPPLIED ACCESSORIES

Coaxial cable



Remote Control Unit
with Batteries



PART NO. (WPZ0102JC001/
5750398 /WPZ0102BB001/
5750476)

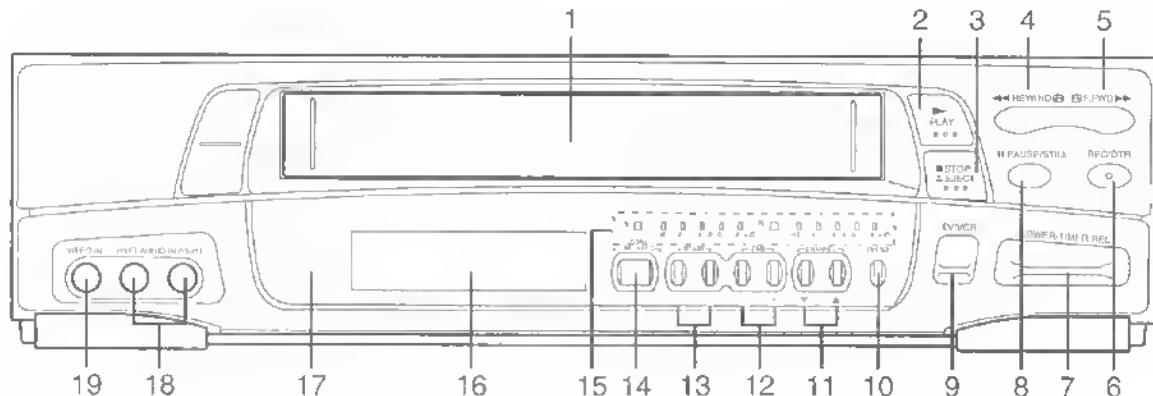
PART NO.
(URFMT36SR017)

NOTES:

- If you need to replace these accessories, please refer to the PART NO. under the illustrations and contact the Funai parts department for ordering.
- Depending on your antenna system, you may need different types of Combiners (Mixer) or Separators (Splitter). Contact your local electronics store for these items.

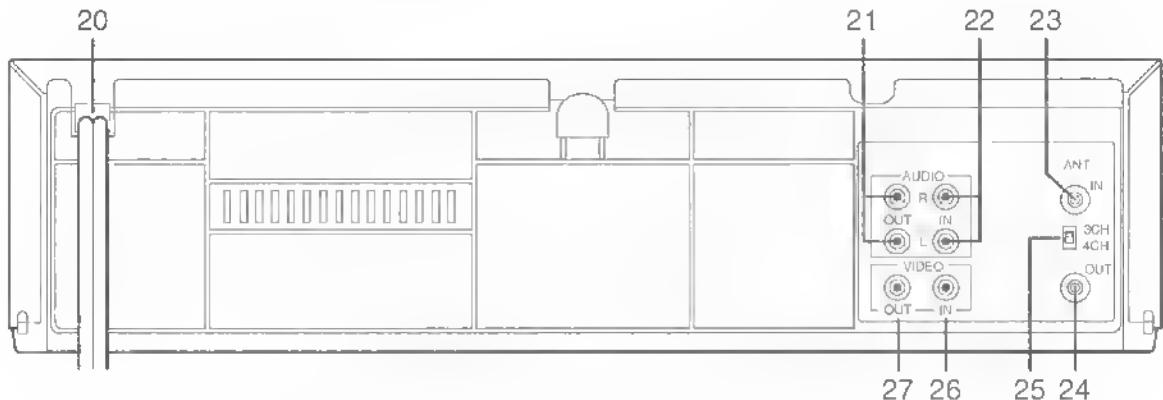
OPERATING CONTROLS AND FUNCTIONS

—FRONT VIEW—

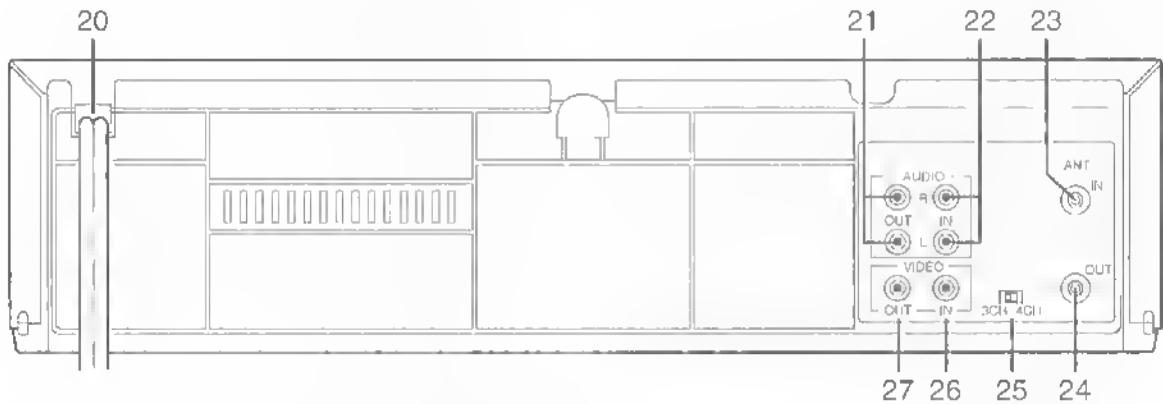


- 1 Cassette Compartment**
- 2 REWIND button**—Press to begin playback of a tape.
- 3 STOP/EJECT button**—Press to stop tape motion. Press to remove tape from VCR.
- 4 REWIND button**—Press to rewind tape or to view video in reverse at a faster than normal speed. Press PLAY button to return VCR to normal playback speed.
- 5 F.FWD button**—Press to advance tape or to view video in forward direction at a faster than normal speed. Press PLAY button to return VCR to normal playback speed.
- 6 REC/OTR button**—Press to begin manual recording and activate one touch recording mode.
- 7 POWER/TIMER REC button**—Press to turn VCR on and off. Press to activate the automatic timer recording.
- 8 PAUSE/STILL button**—Press to temporarily stop tape during playback or manual recording.
- 9 TV/VCR button**—Press to select the signal source that your TV will receive.
VCR position: to view playback, to monitor video recordings or watch TV using the VCR timer.
TV position: to watch TV or to view one program while recording another.
- 10 SPEED button**—Press to set desired tape speed.
- 11 CHANNEL buttons**—Press to select the channel for viewing or recording.
- TRACKING function**—Press "▲" or "▼" to minimize video 'noise' (lines or dots on screen) during tape playback.
- 12 END buttons**—Press to select desired end time by pressing "+" or "-" button in the Today Timer Rec mode.
- 13 START buttons**—Press to select desired start time by pressing "+" or "-" button in the Today Timer Rec mode.
- 14 TODAY TIMER REC button**—Press to set Today Timer Recording.
- 15 Peak Level Meter**—Indicates the audio output level for left and right channels.
- 16 Digital Display**—Displays the clock, timer recording, counter and channel etc.
- 17 REMOTE SENSOR window**—Receives the infrared control signals from the handheld remote control unit.
- 18 AUDIO IN jacks**—For connection to audio output jacks of your audio equipment or another VCR. (use these jacks when selecting the "L2" position, see page 15 "INPUT SELECT")
- 19 VIDEO IN jack**—For connecting to video output jack of your video camera or another VCR. (use this jack when selecting the "L2" position, see page 15 "INPUT SELECT")

—REAR VIEW AND TERMINALS—



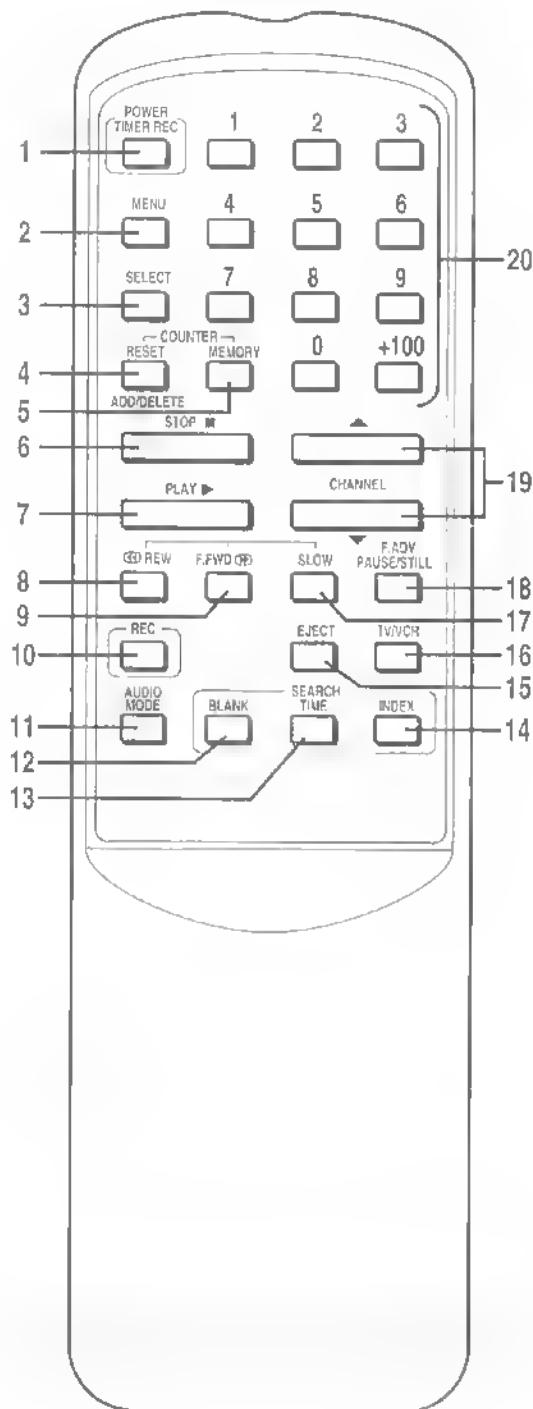
or



- 20 Power cord**—Connect to a standard AC outlet (120V/60Hz).
- 21 AUDIO OUT jacks**—For connection to audio input jacks of your audio equipment or another VCR.
- 22 AUDIO IN jacks**—For connection to audio output jacks of your audio equipment or another VCR. (use these jacks when selecting the "L1" position, see page 15 "INPUT SELECT")
- 23 ANT. IN terminal**—For connection to an antenna or CATV.
- 24 ANT. OUT terminal**—For connection to an antenna in terminal of your TV.
- 25 3CH/4CH selector switch**—Use to select the video output channel (3 or 4) for playback from the VCR.
- 26 VIDEO IN jack**—For connection to video output jack of your video camera or another VCR. (use this jack when selecting the "L1" position, see page 15 "INPUT SELECT")
- 27 VIDEO OUT jack**—For connection to the video input jack of video processor or another VCR.

REMOTE CONTROL OPERATION

You can operate most of your VCR's functions from the Remote Control (included). The buttons on the Remote Control unit have the same functions as the corresponding buttons on the VCR.



HOW TO USE THE REMOTE CONTROL

- 1 POWER/TIMER REC button**—Press to turn VCR on and off. Press to activate the automatic timer recording.
- 2 MENU button**—Press to display main menu on the TV screen.
- 3 SELECT button**—Press to select setting modes (TIMER PROGRAMMING, CHANNEL SET UP, SETTING CLOCK, REPEAT PLAY, RENTAL, REMAIN, etc) from menu.
- 4 ADD/DELETE button**—Press to add or delete channel numbers. Press to cancel a timer program.
COUNTER RESET button—Press to reset counter to 0:00:00.
- 5 COUNTER MEMORY button**—Press to set counter memory on and off.
- 6 STOP button**—Press to stop the tape.
- 7 PLAY button**—Press to playback the tape.
- 8 REW button**—Press to rewind the tape, or to view the picture rapidly in reverse during playback. (Rewind Search)
SLOW [-] button—Press to control speed in slow motion. (slower)
F.FWD button—Press to rapidly advance the tape, or view the picture rapidly forward during playback. (Forward Search)
SLOW [+]—Press to control speed in slow motion. (faster)
- 9 REC button**—Press to begin recording.
- 10 AUDIO MODE button**—Press to select audio output mode.
- 11 BLANK SEARCH button**—Press to use Blank Search mode.
- 12 TIME SEARCH button**—Press to use Time Search mode.
- 13 INDEX SEARCH**—Press to use Index Search mode.
- 14 EJECT button**—Press to remove tape from VCR.
- 15 TV/VCR button**—Press to select TV or VCR mode.

- 17 SLOW button** – Press in playback for slow motion. Slow speed can be control by pressing SLOW [+/-] button (faster) or SLOW [-] button (slower).
- 18 F.ADV button** – Press this button during pause/still mode to advance one frame. To release, press PAUSE/STILL button again.
- PAUSE/STILL button** – Press to temporarily stop the tape during recording or to view a still picture during playback.
- 19 CHANNEL buttons** – Press to select desired channel by using either "▲" or "▼" button. They cannot be used during Timer Recording.
- 20 NUMBER buttons** – Press to select desired channels and select item in the menu mode. They cannot be used to set desired channel during Timer Recording. To select channels from 1 to 9, first press "0" button then 1 to 9.
- +100 button** – Press to select cable channels which are equal or greater than number 100.

INSTALLING THE BATTERIES

1

Slide the battery compartment cover by pressing the cover on the remote unit in the direction of the arrow.



2

Insert 2 "AA" batteries into the battery compartment in the direction as indicated by the polarity (+/-) markings.



3

Replace the cover.

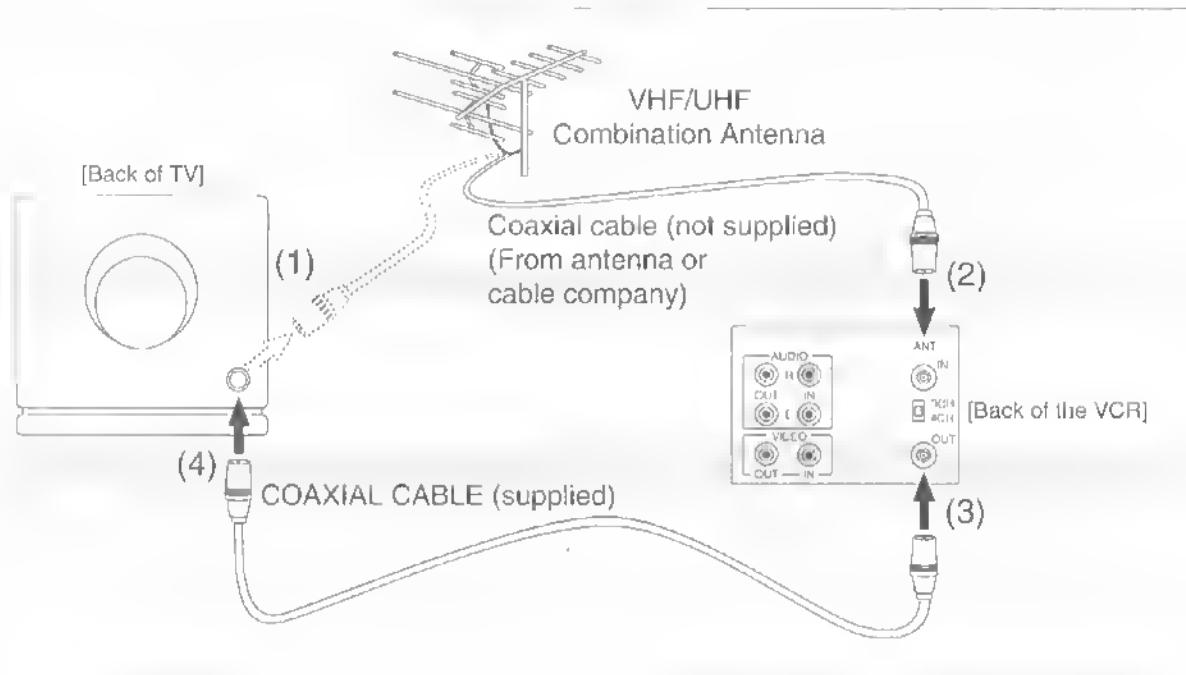


CABLE CONNECTIONS

For some of the most common types of connections, see the following drawings. Use only one connection. For any further complex connections, please contact your local dealer, cable company or other qualified persons. (You may need additional accessories which are not supplied).

COMBINATION VHF/UHF ANTENNA, CATV COAXIAL CABLE

- (1) Disconnect the round 75-ohm combination VHF/UHF coaxial antenna cable (or CATV coaxial cable) from the back of your TV set.
- (2) Reconnect the coaxial cable to ANT. IN terminal of the VCR.
- (3) Connect one end of the COAXIAL CABLE (supplied) to the ANT. OUT jack of the VCR.
- (4) Connect the other end of the COAXIAL CABLE (supplied) to the antenna/cable jack of your TV.



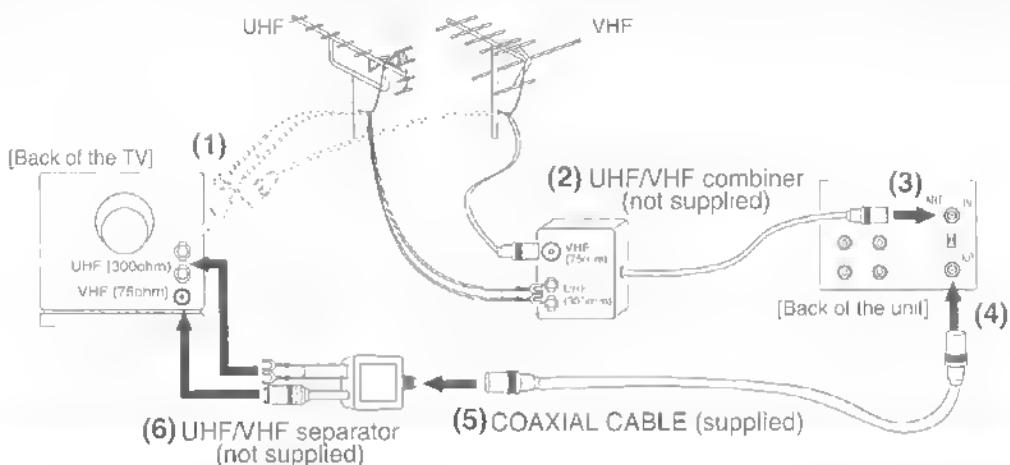
Note to CATV system installer

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building as close to the point of cable entry as practical.

SEPARATE VHF (75-OHM) / UHF (300-OHM) ANTENNA

- (1) Disconnect the VHF coaxial antenna cable and the UHF flat twin-lead antenna cable from the back of your TV set.
- (2) Reconnect those cables to a UHF/VHF combiner (not supplied).
- (3) Connect end of the UHF/VHF combiner to the ANT. IN terminal of the VCR.

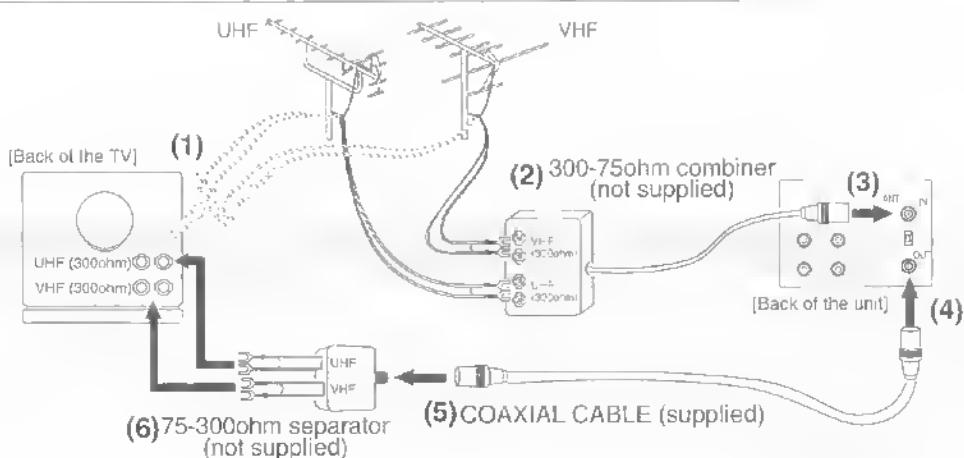
- (4) Connect one end of the COAXIAL CABLE (supplied) to the ANT. OUT terminal of the VCR.
- (5) Connect the other end of the COAXIAL CABLE (supplied) to a UHF/VHF separator (not supplied).
- (6) Connect the separator's coaxial end to the TV's VHF jack, and flat twin-lead end to the TV's UHF terminal.



SEPARATE UHF/VHF (300-OHM) ANTENNA

- (1) Disconnect the UHF and VHF flat twin-lead antenna cable from the back of your TV set.
- (2) Reconnect those cables to a 300-75ohm combiner (not supplied).
- (3) Connect end of the 300-75ohm combiner to the ANT. IN terminal of the VCR.

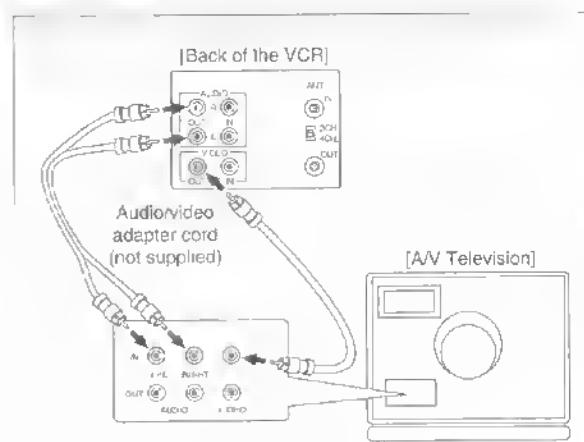
- (4) Connect one end of the COAXIAL CABLE (supplied) to the ANT. OUT terminal of the VCR.
- (5) Connect the other end of the COAXIAL CABLE (supplied) to a 75-300ohm separator (not supplied).
- (6) Connect the separator's flat twin-lead ends to the TV's UHF and VHF terminals.



A/V TERMINALS

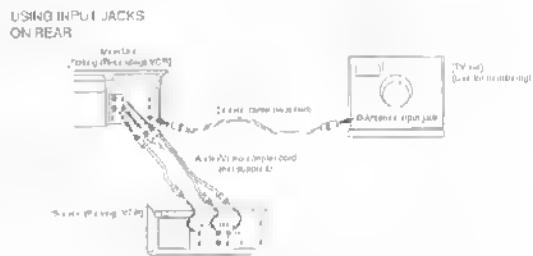
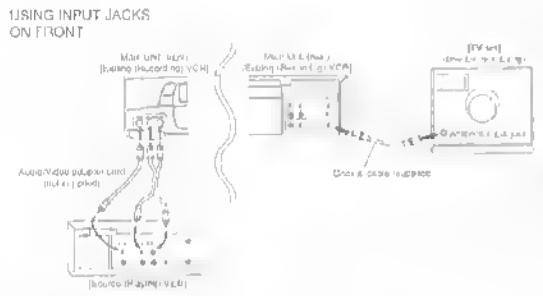
If your TV has A/V input jacks, you may connect your VCR's AUDIO/VIDEO OUTPUT jacks to the audio/video input jacks on back of your TV.

Direct audio/video connections usually result in a better picture and sound quality for tape playback. Please see your TV's owner's manual.



TO COPY A VIDEO CASSETTE (Requires two VCR's)

Connect editing (recording) VCR, source (playing) VCR and your TV using the following diagram:



1. Insert a pre-recorded video cassette into the source(playing) VCR.
2. Insert a blank video cassette, or one you want to record over, into the editing(recording) VCR cassette compartment.
3. Press SPEED button to select the desired recording speed (SP, LP or SLP).
4. Select external input jacks. See page 15, under "Input Select".
5. Press REC button on the editing(recording) VCR.
6. Begin playback of the tape in the source(playing) VCR.

NOTE: For best results during dubbing, use the VCR's front panel controls whenever possible. The remote control might affect the playback VCR's operation.

- Always use video-quality shielded cables with RCA-type connectors. Standard audio cables are not recommended.
- You can use a video disc player, satellite receiver, or other audio/video component with A/V outputs in place of the playback VCR.

TO MONITOR THE RECORDING

1. Turn on the TV connected to the editing VCR, and set it to the same output channel as the editing VCR 3CH/4CH switch.
2. Press TV/VCR button on the editing VCR so that VCR appears on the display.

USING A CATV CONVERTER BOX

If your cable service supplies you with a converter box, you can use the basic connection shown below.

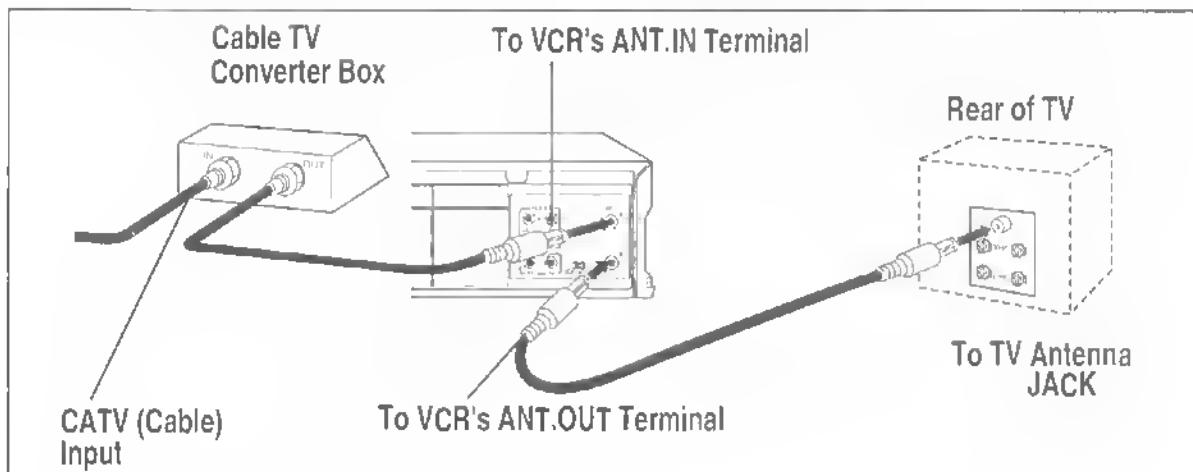
TO RECORD AND VIEW A SCRAMBLED/UNSCRAMBLED CHANNEL.

1. Press TV/VCR button so that "VCR" appears on the display.
2. Set the TV channel to the same video output channel as the switch located on the back of the VCR (CH3 or 4).
3. Set the VCR channel selector to the output channel of the Cable Converter box.
4. Select the channel to be recorded at the Cable Converter Box.

NOTES:

With this connection, you CANNOT record one program while viewing another.

Channel memory programming is NOT needed when using this connection.



CONTROLLING VCR INPUT & OUTPUT

VIDEO OUTPUT CHANNEL SETTING (BACK OF VCR)

When the VCR is in the Playback mode, or when the TV/VCR button is in the VCR position, your TV will receive the signals from the VCR on either channel 3 or 4. Set the 3CH/4CH selector switch to the station that is not used for normal broadcasts in your area; then set your TV to that same channel when viewing from the VCR.

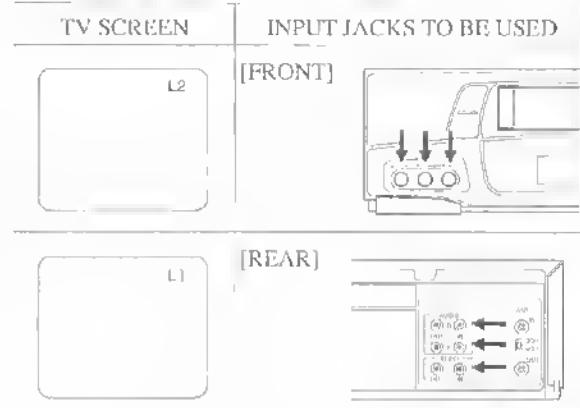
The RF converter output of this unit is set to VHF channel 3 prior to shipment from the factory.



INPUT SELECT

To use the external input jacks, select the "L1" or "L2" position. If you use the input jacks on front, select the "L2" position. If you use the input jacks on rear, select the "L1" position. Press CHANNEL "▲" or "▼" button repeatedly so that "L1" or "L2" appear on the screen.

Note: "L1" and "L2" are found before the lowest memorized channel (Example: ch2)



MTS MODE

This VCR will decode STEREO and bilingual (SAP) broadcast sound signals MTS (EIA recommended system only). This VCR will also decode TV sound from local CATV companies, as they operate on assigned CATV frequencies and use the EIA recommended MTS stereo/bilingual TV sound system. When the unit is properly connected to your home stereo system, the setting of the STEREO/SAP Selector determines what type of sound you will hear through your speakers. Refer to the table below.

Type of broadcast	Display on the TV screen	MENU STEREO/SAP SELECT	Recording mode <Audio output mode is selectable>			
			Hi-Fi audio track (2-channel)		Normal audio track	
			L-channel	R-channel		
Regular (monaural audio)	None	Invalid	Mono	Mono	Mono	
Stereo broadcast	STEREO	Invalid	L	R	L + R	
Bilingual broadcast	SAP	Invalid	Main audio program	Sub audio program	Main audio program	
Stereo & Bilingual broadcast	STEREO SAP	TV STEREO*	L	R	L + R	
		SAP*	Main audio program	Sub audio program	Main audio program	

*NOTES:

- When TV programs are broadcast in both STEREO and bilingual (SAP), STEREO/SAP will be displayed on the TV screen, and you will be able to select the recording mode in either stereo (STEREO) or bilingual (SAP). You cannot select both STEREO and bilingual (SAP) simultaneously. **Refer to [5]-[8] on page 23.**
- When TV programs are broadcast in normal, STEREO or bilingual (SAP), the recording mode will be set automatically to match the programs even though you select STEREO or bilingual (SAP).
- When you press the SELECT button or CHANNEL "▲" or "▼" button, the status will be displayed on the TV screen.



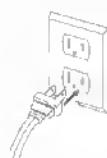
CHANNEL MEMORY PROGRAMMING (Preset)

You can program the tuner to scan only the channels you receive in your area. See page 45 for channel designations.

- Programmed channels are erased when you disconnect the power cord or if a power failure occurs.

1

Plug the VCR power cord into a standard AC outlet. The "—;—" flashes.



2

Turn on the TV and set the TV channel to the same video output channel as the VCR's 3CH/4CH selector switch, located on the back of the VCR.



3

Press POWER button to turn on the VCR.



4

Press TV/VCR button on the VCR or on the remote control unit so that "VCR" appears on the VCR display and "LANGUAGE SELECT" appears on the TV display.



5

Select 1 (ENGLISH) or 2 (ESPAÑOL = SPANISH) with number button.



6

Press SELECT or MENU button on the remote control unit so that "TUNER SET UP" appears on the TV display.



7

Press SELECT button once. The tuner scans and memorizes all the active channels in your area.

The VCR distinguishes between standard TV channels and CATV. If the CATV can be tuned, "CATV" appears on the display. (TV mode: from CH2/ CATV mode: from CH1)



8

After scanning, the tuner stops on the lowest memorized channel.



9

The display returns to original mode 5 seconds after scanning.



- If you want to recall the selected channels, you can select the desired channel directly by number button or CHANNEL ▲ or ▼ button on the remote control unit.

Note:

- The display returns to original mode when you press MENU button in Tuner Set Up mode.

To preset channel memory again

Follow steps [2] and [3] on the previous page, then step [4] below.

4

Press TV/VCR button on the VCR or on the remote control unit so that VCR appears on the VCR display.



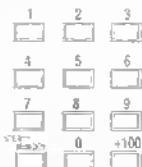
5

Press MENU button on the remote control unit.



6

Select item 3(INITIALIZE) with number button.



7

Select item 1(CHANNEL SET UP) with number button.

Select 1(TV) or 2(CATV) with number button.

(Example: 1(TV))



8

Press SELECT button. The tuner scans and memorizes all the active channels in your area.

(TV mode: from CH12 / CATV mode: from CH1)



9

After scanning, the tuner stops on the lowest memorized channel. (Example: CH02)

CH 02

If you want to recall the selected channels, you can select the desired channel directly by number button or CHANNEL ▲ or ▼ button on the remote control unit.

TO DELETE, ADD PRESET CHANNEL

Use this procedure to delete from memory the channels you no longer receive or seldom watch and to manually add to memory previously deleted channels.

DELETING PRESET CHANNEL

1

Press TV/VCR button on the VCR or on the remote control unit so that VCR appears on the VCR display.



2

Press MENU button on the remote control. The main MENU appears on the TV screen.



3

Select item 3(INITIALIZE) with number button.



4

Select item 1(CHANNEL SET UP) with number button.



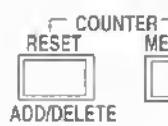
5

Select item 3(ADD/DELETE CH) with number button. Enter the desired channel using the number buttons. The channel flashes. (Example: 02)



6

Press ADD/DELETE button so that "DELETE" flashes on the display. The channel is deleted.



- For next channel you wish to delete, select that channel and follow step [6].
- If you press ADD/DELETE button again, the channel is memorized again.

7

Press MENU button. The TV screen returns to TV mode.

Note: To check the channel(s) that has been deleted, press CHANNEL ▲ or ▼ button.

ADDING PRESET CHANNEL

1

Press TV/VCR button on the VCR or on the remote control unit so that VCR appears on the VCR display.



2

Press MENU button on the remote control. The main MENU appears on the TV screen.



3

Select item 3(INITIALIZE) with number button.



4

Select item 1(CHANNEL SET UP) with number button.



5

Select item 3(ADD/DELETE CH) with number button. Enter the desired channel using the number buttons. The channel flashes. (Example: 03)



6

Press ADD/DELETE button so that "ADD" flashes on the display. The channel is added to the VCR.



- For next channel you wish to add, select that channel and follow step [6].
- If you press ADD/DELETE button again, the channel is deleted again.

7

Press MENU button. The TV screen returns to TV mode.

Note: To check the channel(s) that has been added, press CHANNEL ▲ or ▼ button.

SETTING THE CLOCK

Set the clock accurately for proper automatic timer recording. We suggest that you use a TV or radio station as your time source.

In the example below, the clock is to be set to:

DATE Tuesday 1st March, 1994
SETTING TIME 5:40PM

1

Press POWER/TIMER REC button to turn on the VCR.



2

Press TV/VCR button on the remote control unit so that "VCR" appears on the display.



3

Press MENU button on the remote control unit. The main menu appears on the TV screen.

4

Select item 3(INITIALIZE) with number button.



5

Select item 2(SETTING CLOCK) with number button.
The MONTH digits flash.



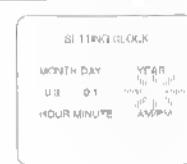
6

Enter your desired MONTH with number button.
(Example:03)



7

Enter your desired DAY with number button.
(Example:01)



8

Enter your desired YEAR with number button.
(Example:1994)

The day of the week will change automatically.

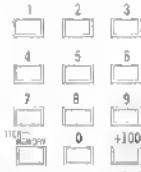


9

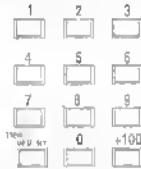
Enter your desired HOUR with number button.
(Example:05)

**10**

Enter your desired MINUTE with number button.
(Example:40)

**11**

Select AM(1) or PM(2) with number button.
(Example: 2 → PM)



Press ADD/DELETE button to back one step from current step during steps [6] to [11].

12

Press MENU or SELECT button to start the clock.

Although seconds are not displayed, they begin counting at 00 when you press MENU or SELECT button. Use this feature to synchronize the clock as accurately as possible.



This unit has a built in calendar up to the year 2008.

Notes:

- When unplugging the AC-cord or if there is a power failure, "----" flashes on the display.
- If the display shows an abnormal reading or no reading, unplug the power cord for a few seconds. Then plug it back in.

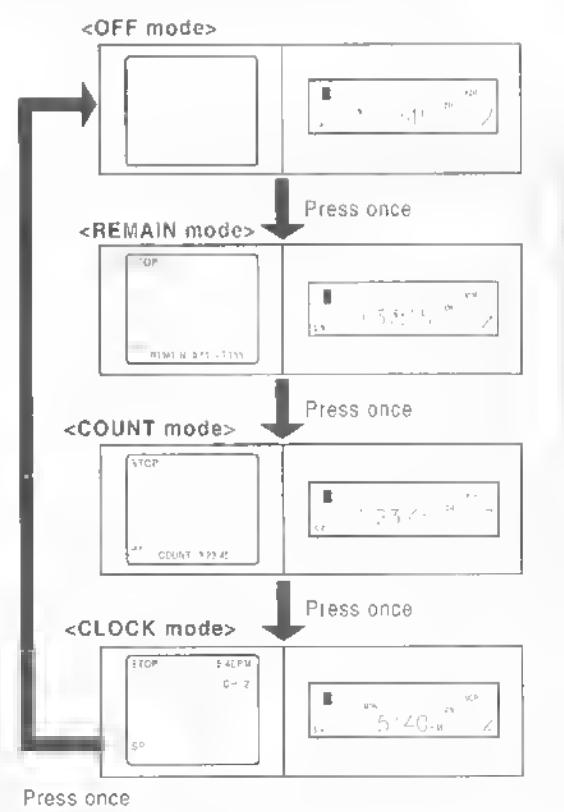
TO CHANGE CLOCK SETTING

If you want to change the clock,

- 1) Follow steps [3] to [5] on page 21.
- 2) Select desired digit with SELECT button.
- 3) Enter correct numbers with number button.
- 4) Press MENU button to return to original mode.

CHECKING THE REMAIN, COUNT, CLOCK AND CHANNEL NUMBER

To check the Remain, Count, Clock and Channel number on the TV screen or display, press SELECT button. Each time you press SELECT button, TV screen or display will change as follows:



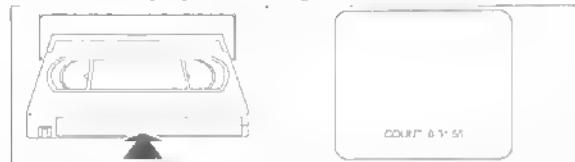
VIEWING AND RECORDING THE SAME PROGRAM

- TV and VCR power must be on.
- Turn on the TV and set the TV channel to the same video output channel located on the back of the VCR. (CH 3 or 4)

1

Insert a cassette tape with its safety tab in place, if necessary, rewind or fast forward the tape to the point at which you want to begin recording.

The VCR display will change to the count mode.



2

Press TV/VCR button so that "VCR" appears on the display.



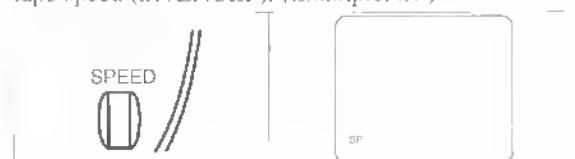
3

Select the program to be recorded by pressing the number buttons or the CHANNEL ▲ or ▼ button.



4

Press SPEED button on the VCR to select the desired tape speed (SP/LP/SLP). (Example: SP)



If the program is not a stereo or bilingual broadcast, skip steps [5] to [8] and go to step [9].

Refer to page 16 for details.

5

Press MENU button on the remote control. The main MENU appears on the TV screen.



6

Select item 2(VCR SET UP) with number button.



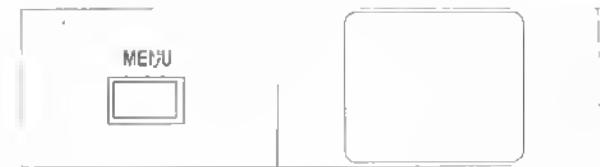
7

Select item 5(TV STEREO) or 6(SAP) with number button, in which you want to record. [Example: item 5(TV STEREO)]



8

Press MENU button. The MENU disappears from the screen.



9

Press REC button.

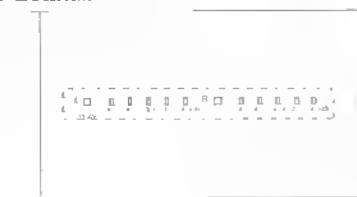
The red "REC" indicator lights on the display.



10

To monitor the sound during recording, press AUDIO MODE button to set the desired position.

Refer to page 16 for details.



To delete scenes during recording

11

Press PAUSE/STILL button.

Note: If you do not press PAUSE/STILL button again within five minutes, VCR will automatically return to record mode. You may review the time remaining with "■" marks on the display. Each "■" mark shows one minute.

12

Press PAUSE/STILL button again to resume recording.

13

Press STOP button when recording is completed.

EDIT SEARCH

To edit an unwanted segment from the already recorded portion of tape while VCR remains in record mode.

1

While VCR in record mode, press PAUSE/STILL button.

2

Press and hold REW button until you have reached the beginning of the unwanted segment. (If you rewind past the beginning of the unwanted segment, press and hold F.FWD button until you have reached it.)

- If you do not press PAUSE/STILL button again within five minutes, VCR will automatically return to record mode.

3

Press PAUSE/STILL button again to resume recording.

4

Press STOP button when recording is completed.

NOTE: You may not have good results when you record a TV game software etc.

RECORDING ONE PROGRAM WHILE VIEWING ANOTHER

You can record one program while viewing another. To start recording, follow steps [1] to [9] under "VIEWING AND RECORDING THE SAME PROGRAM" page 23.

[10]

Press TV/VCR button on the remote control unit to select TV so that "VCR" disappears from the VCR display.



[11]

Set the TV to the channel you want to watch.



To monitor the progress of your recording,

[12]

Press TV/VCR button on the remote control unit so that "VCR" appears on the VCR display.



[13]

Turn on the TV and set the TV channel to the same output channel. (CH3 or 4)

AUTOMATIC TIMER RECORDING

You may set the VCR to start and end a recording while you are away. You can set seven events to record on specific days, daily or weekly within a 1 year period.

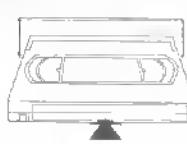
In the example below, the timer is being set to record:

DATE Friday 6th May, 1994
SETTING TIME from 7:30AM to 8:50AM
CHANNEL CH61
TAPE SPEED LP

- VCR Power must be turned on when setting the timer.
- Turn on the TV and set the TV channel to the same video output channel located on the back of the VCR. (CH 3 or 4)
- Press TV/VCR button so that "VCR" appears on the VCR display.
- Clock must be set to the correct time and date before setting the timer.

[1]

Insert a blank cassette, or one that you want to record over, into the cassette compartment.



[2]

Press MENU button on the remote control unit. The main menu appears on the TV screen.

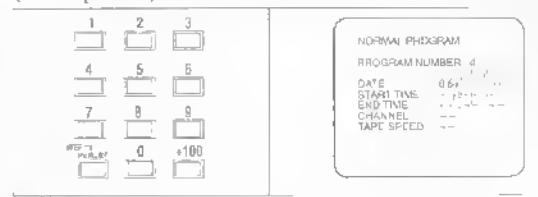


3

Select item 1(TIMER PROGRAMMING) with number button.

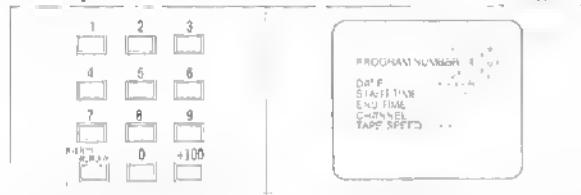
**7**

Enter your desired MONTH with number button.
(Example:05)

**4**

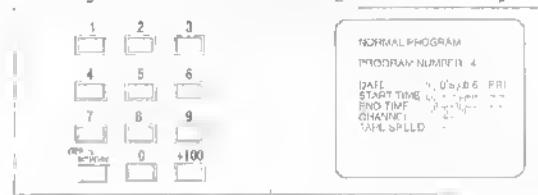
Select your desired program number with number button.
(Example: 4)

The program number 8 is used for setting Today Timer Recording only. You cannot select number 8 in the procedure of Automatic Timer Recording.

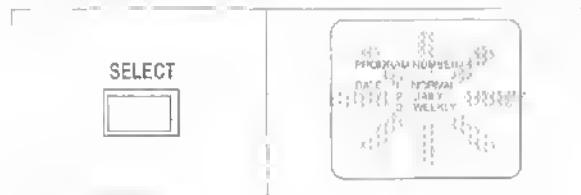
**8**

Enter your desired DAY with number button.
(Example:06)

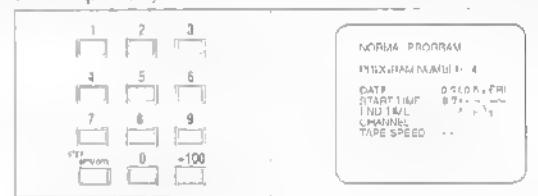
The day of the week will change automatically.

**5**

Press SELECT button.

**9**

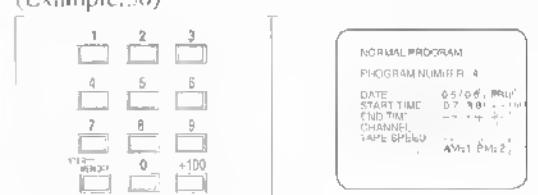
Enter your desired HOUR with number button.
(Example:07)

**6**

Select item 1 (NORMAL) with number button. The MONTH digits flash.

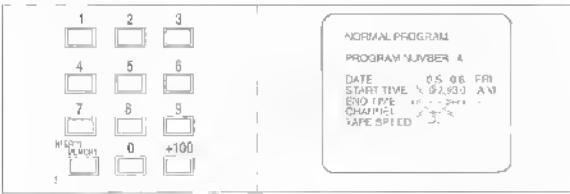
**10**

Enter your desired MINUTE with number button.
(Example:30)

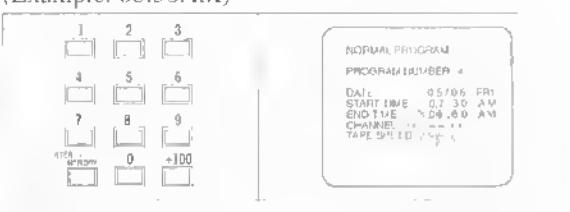


11

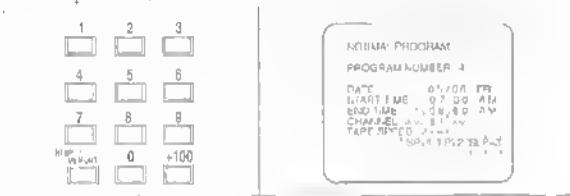
Select AM(1) or PM(2) with number button.
(Example: 1→AM)

**12**

Repeat steps [9]-[11] to set the end time.
(Example: 08:50AM)

**13**

Enter your desired CHANNEL with number button.
(Example: 61)

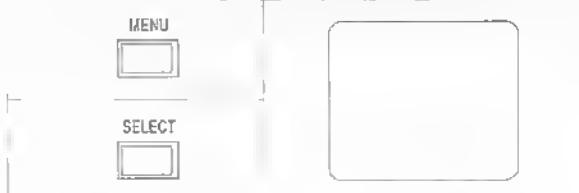
**14**

Select your desired recording speed SP(1), LP(2) or SLP(3) with number button. (Example: 2→LP)

**15**

Press MENU or SELECT button on the remote control unit. Program 4 is now completed.

To set another program, repeat steps [2] to [15].

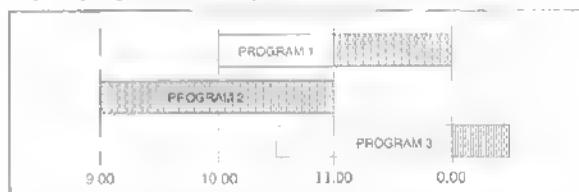
**16**

Press POWER/TIMER REC button on the VCR or on the remote control unit. The " [✓] " indicator appears on the display.



Note: When the programs overlap, the earlier program has priority.

If you programmed as per as the above illustration the



timer recording would be carried out as follows:

9:00 - 11:00 for PROGRAM 2

11:00 - 0:00 for PROGRAM 1

0:00 - for PROGRAM 3

DAILY PROGRAM (MONDAY~SUNDAY)

To record a program at the same time on the same channel every day, follow steps [1] to [5] on page 25, 26, then continue with step [6a] below.

6a

Select item 2 (DAILY) with number button.



Continue with step [7] on page 26 onwards.

WEEKLY PROGRAM

To record a program at the same time on the same channel every week, follow steps [1] to [5] on page 25, 26, then step [6b] below.

6b

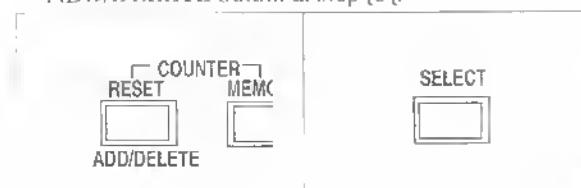
Select item 3 (WEEKLY) with number button.



Continue with step [7] on page 26 onwards.

TO CORRECT OR CANCEL A PROGRAM

- Press ADD/DELETE button to go back one step from current step during steps [5]~[14].
- If you finished setting program, press SELECT button repeatedly until your desired digit flashes and reset program.
- You may cancel the entire program by pressing ADD/DELETE button at step [5].



CHECKING TIMER PROGRAMS

To check a program that is to be recorded using the Automatic Timer Program when the VCR is in the timer-record mode:

- 1) Turn on the TV and set the TV channel to the same video output channel as the selector switch located on the back of the VCR.
- 2) Press POWER/TIMER REC button so that timer indicator "" disappears from the VCR display.
- 3) Press TV/VCR button on the remote control unit so that "VCR" appears in the VCR display.
- 4) Follow instructions in steps [2] to [5] on page 25, 26. Information which was set for programming will now appear.

AUTOMATIC TIMER RECORDING HINTS

- If there is a power failure or the VCR is unplugged for more than a few seconds, the clock setting and all timer settings are lost.
 - If you are recording using the Programmed Automatic Timer, you may not operate the unit manually, but, you may still stop the recording by pressing STOP/EJECT button on the VCR.
- Note:** STOP/EJECT button on the remote control unit will not function in this mode.
- If a tape is not inserted or the erase-protection tab is removed, the timer indicator "" flashes and automatic timer recording cannot occur. Press POWER/TIMER REC button to stop the flashing. Then, insert a tape that allows recording.

TODAY TIMER RECORDING

You may set the VCR to start and end recording one program within 24 hours by simply pressing TODAY TIMER REC button on the VCR. It is easy for you to set the timer for recording today's TV program.

- VCR power must be on to set Today Timer.
- Clock must be set to the correct time before setting the timer.
- Today Timer Recording controls program number 8.

In the example below, the Today Timer is being set to record (current time is 6:00PM):

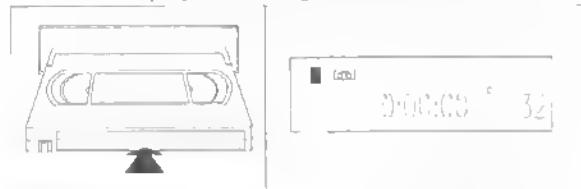
Setting time from 9:30PM to 11:00PM
Channel C1161
Tape speed LP

NOTE: This function cannot be done by the remote control.

1

Insert a cassette tape with its safety tab in place. (If necessary, rewind or fast forward the tape to the point at which you want to begin recording.)

The VCR display will change to the count mode.



4

Set the desired start time. Press START "+" or "-" button repeatedly or hold it down until your desired start time is displayed. (Example: 9:30 PM)



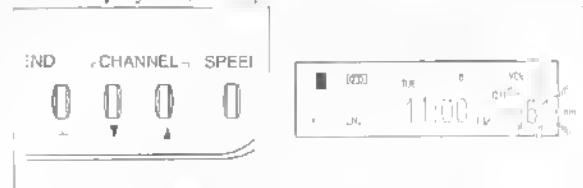
5

Set the desired end time. Press END "+" or "-" button repeatedly or hold it down until your desired end time is displayed. (Example: 11:00 PM)



6

Set the channel number. Press CHANNEL ▲ or ▼ button repeatedly or hold it down until your desired channel number is displayed. (Example: C1161)



TO CHECK...

1. Press SPEED button until your desired display. (AUTO = no display - SP or LP)
can be changed at any step from [3] to



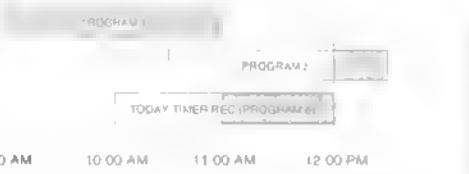
Press POWER/TIMER REC button to return to original display.



Press POWER/TIMER REC button to set Today recording. This turns the VCR power off, and "T" indicator lights up on the display. The program number "8" is displayed with current time.



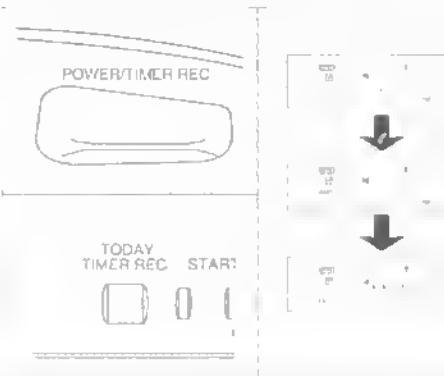
on the programs overlap. Today Timer Record-program has priority.



If you program as per the illustration the timer recording would be carried out as follows.

- 9:00AM - 11:00AM for PROGRAM 1
- 11:00AM - 12:00AM for PROGRAM 2
(TODAY TIMER REC)
- for PROGRAM 2

To check the start/end time and channel number, press POWER/TIMER REC button so that "T" indicator appears, then press TODAY TIMER REC button once. Both the start and end time will appear for 3 seconds each, and return to the Timer Stand-by mode.



TO CANCEL A TODAY TIMER PROGRAM

- While setting a program; press STOP/EJECT button on the VCR.
- After setting a program; (power must first), press TODAY TIMER REC button, then press STOP/EJECT button.
- While recording is in progress, press STOP/EJECT button.



INDEX SEARCH

This feature provides a method of indexing the starting point so that it can be easily returned to in either fast forward or rewind mode.

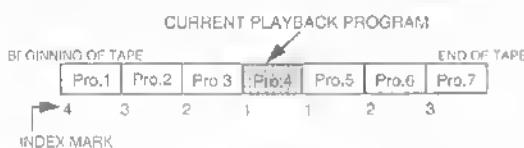
MAKING THE INDEX MARK

The index mark will be made automatically when the REC button is pressed. It will also be marked at the starting point of Timer recording and OTR.

- The index mark is not recorded if the PAUSE/STILL button is pressed and released during recording.
- The time gap between making the index marks on the tape should be greater than 1 minute for SP recording, 2 minutes for LP recording and 3 minutes for SLP recording.
- Index marks cannot be made if the erase-protection tab on the cassette has been removed.

INDEX SEARCH OPERATION

Example: You are watching program number 4 and want to fast forward to program number 7. You must skip three programs.



2

Press the number button corresponding to the number of program that you want to skip.

(Example: To skip three programs, press number button 03.)



To correct the Index number, press **DELETE** button and re-enter the correct number.

3

Press REW or F.FWD button. The VCR begins rewinding or fast forwarding then goes into playback mode at the beginning of desired program. (Example: F.FWD button)



Note: Every time an index signal is skipped, the number in the program indicator decreases by one.

4

When the preset program is reached, normal playback will start.



Notes:

- Index search can be set up to 20.
- This function is not operative in recording mode.
- Procedures must be followed within 30 seconds, from steps [1] to [2]. Otherwise the Index Search mode will be cancelled.
- Counter Memory function is not operative in this mode.
- This function is not operative when a cassette tape is not inserted in the VCR.
- Press **STOP** button on the VCR or remote control unit to finish the Index Search mode.

TIME SEARCH

The Time Search function makes it possible to quickly advance the tape from any position by entering the exact desired amount of playback time of the part that you want to skip.

Example: To watch the program after 2:53 from present position to forward direction.

USING TIME SEARCH MODE

1

Press TIME SEARCH button. The HOUR digits flash.

— SEARCH —
TIME



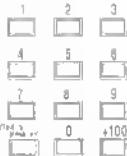
2

Enter the desired hour with number button.
(Example: 2)



3

Enter the desired minutes with number button.
(Example: 53)



To correct the time, press DELETE button and repeat steps [1] to [3].

4

Press F.FWD or REW button. The tape will move to the specified point.
(Example: F.FWD button)

F.FWD ▶



TIME SEARCH
2:53



Note: The time counts down as the searching progresses.

5

When 0:00 is reached, the tape will start playback automatically.

PLAY ▶



Notes:

- Time search can be set up to 9:59.
- Procedures must be followed within 30 seconds from steps [1] to [3]. Otherwise, the Time Search mode will be cancelled.
- This function is not operative in recording mode.
- Counter Memory function is not operative in this mode.
- This function is not operative when a cassette tape is not inserted in the VCR.
- Press STOP button on the VCR or remote control unit to finish the Time Search mode.
- When you use this function, cancel the Counter Memory. To cancel the Counter Memory, refer to page 38.

BLANK SEARCH

This function enables you to search for the unrecorded portion of the tape in the forward direction.

- Tape must be fully rewound.

USING BLANK SEARCH MODE

1

Press BLANK SEARCH button. Blank Search function starts automatically in the forward direction.



2

The VCR begins fast forwarding to the beginning of the blank part of the tape.

The tape will automatically stop.



Note:

- This function is not operative when a cassette tape is not inserted in the VCR.
- When you use this function, cancel the Counter Memory. To cancel the Counter Memory, refer to page 38.

SETTING THE REMAIN TIME

- You can set the remaining tape running time of your tape.
- If your cassette tape length is T-130 or less, select "T-130". For example, the popular T-120 cassette tape calls for the "T-130" selection. If your cassette tape is T-140 or greater, select "T140~". Then the tape remaining indication will be correct.

1

Press TV/VCR button on the VCR or on the remote control unit so that VCR appears on the VCR display.



2

2

Press MENU button on the remote control unit. The main menu appears on the TV screen.



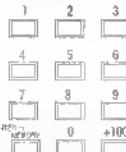
3

Select item 2(VCR SET UP) with number button.



4

Select item 1(TAPE ~T130) or 2(TAPE T140~) with number button.



5

Press MENU button to return to normal mode.

MENU



6

To check the remain time, press SELECT button on the remote control unit until REMAIN appears on TV screen.

Note:

In the Remain Time Mode calculating will start when the cassette tape is inserted and PLAY button is pressed. While calculating, the TV screen shows as illustrated.



REMAINING TAPE RUNNING TIME DISPLAY

- Since the reel diameter and tape thickness are not common to all cassettes, the time count differs from cassette to cassette. Use the time display as an informative number only.
- During recording, the remaining tape running time is estimated based on the current recording mode (SP, LP, SLP).
- During playback the remaining tape running time is calculated based on the current playback mode.
- Remain time will not appear on TV screen while in the Fast Forward or Rewind Mode.
- There will be a delay of up to 1 minute, before the remain time appears on the TV display.

Note:

The use of the following tapes will result in difference between the displayed remaining time and actual time to the end of the tape:

- Tape housed in a VHS-C cassette adapter.
- Shorter tape length such as a 10-minute cassette
- T-180 cassette. In this case the display may read 2 Hours, 40 Minutes at the start point of the tape in SP mode.

JUST-IN TIME RECORDING

This function allows you to fully utilize the available tape length for timer recording. The VCR calculates the remaining tape amount and then adjusts the tape speed from SP to SLP as needed.

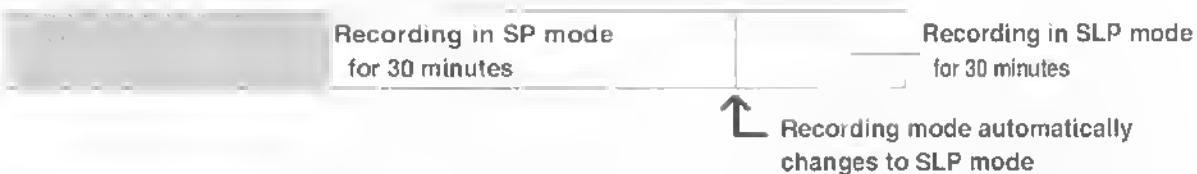
If it is suspected that the end of the tape will be reached before the reserved program ends (as long as SP mode is kept all the way), set recording mode to AUTO. This function is available only with Program No. 1 and Today Timer recording.

The auto mode starts recording in SP mode. The internal circuit compares the rest of the program against the available tape length. If the internal circuit determines that the available tape is not long enough to record the program in the SP mode, the Recording mode is automatically changed to SLP mode. This will assure coverage of the desired timer program before the end of the tape is reached.

Conventional Video Recording



Just-in Time Recording



Notes:

- Set the tape remainder switch ("~T130" or "T140~") to the tape loaded.
- Even if SLP mode is selected, just-in time recording cannot compensate for a tape length which may be too short.
- A momentary picture break up will occur at the point on the tape when the recording speed changes from SP to SLP.
- The displayed remaining tape running time may not always match the actual remaining time on the tape (usually longer than the actual time). It is recommended to set the end of the reserved recording time several minutes before the end of the TV program.

OTR (ONE TOUCH RECORDING)

The One Touch Recording function enables you to record a program simply by pressing OTR button on the VCR. According to the table, simply press OTR button as many times as needed to set the desired recording length. The channel number to be recorded and recording length will be shown on the display.

1

Press POWER TIMER REC button to turn on the VCR.



2

Set the VCR to the channel to be recorded.

3

Press OTR button. Recording starts immediately when the OTR button is pressed, whether if you are watching the same or a different channel. The recording length will be determined by the number of times you press OTR button.



PUSH(ES)	DISPLAY	LENGTH
1 push	Normal Rec Mode	
2 pushes	0:30	30 minutes
3 pushes	1:00	60 minutes
4 pushes	1:30	90 minutes
5 pushes	2:00	120 minutes
6 pushes	2:30	150 minutes
7 pushes	3:00	180 minutes
8 pushes	3:30	210 minutes
9 pushes	4:00	240 minutes
10 pushes	4:30	270 minutes
11 pushes	5:00	300 minutes
12 pushes	5:30	330 minutes
13 pushes	6:00	360 minutes
14 pushes	6:30	390 minutes
15 pushes	7:00	420 minutes
16 pushes	7:30	450 minutes
17 pushes	8:00	480 minutes
18 pushes	Normal Rec Mode	

- Each time you press OTR button, you will extend the recording time by 30 minutes at a time up to 8-hours (or to the end of the tape).
- When OTR button is pressed 18 times, the VCR will record continuously until the end of the tape is reached.
- To stop the OTR operation, press STOP button.
- The recording length time remaining is indicated on the display as the recording is started.
- Recording stops when 0:00 is reached.
- Please note that in the SLP mode maximum recording time, assuming the tape is started at the beginning, is 8 hours using T-160 (or 6 hours using T-120).
- The TV that is connected to your VCR may be turned on or off during OTR recording.

MONITORING RECORDING

1

Turn on the TV and set the TV channel to the same VCR video output channel located on the back of the VCR. (CH3 or 4).

2

Press TV/VCR button on remote control unit so that "VCR" appears on the display.

NOTE: The VCR will continue recording until the pre-set end time is reached or the tape runs out.

VIEWING ONLY TV (WITHOUT RECORDING)

1

Turn VCR power off or press TV/VCR button on the remote control unit to TV, so that "VCR" disappears from the VCR display.

2

Turn on the TV and select the channel you want to watch.



PLAYBACK

1

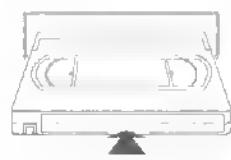
Turn on the TV and set the TV channel to the same video output channel as the VCR's 3CH/4CH selector switch, located on the back of the VCR.



2

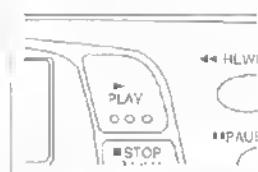
Insert a tape in VCR. VCR will automatically turn on. Press PLAY button.

(If the erase-protection tab has been removed, the VCR will start playback automatically.)



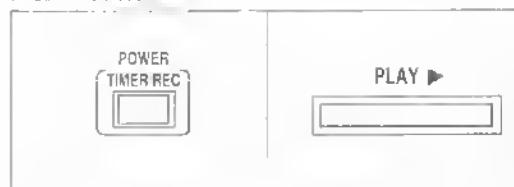
3a

If a tape is already in the VCR, press **PLAY button on the VCR**. Power will turn on and playback will start automatically.



3b

If a tape is already in the VCR, Press **POWER button on the remote control to turn on**, and then press **PLAY button**.



4

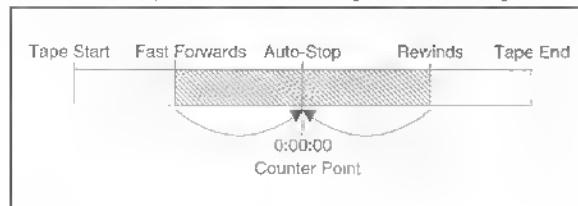
Press **STOP button** when playback is completed.



COUNTER MEMORY

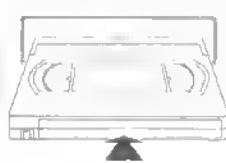
The COUNTER MEMORY button can be used during rewind or fast forward to automatically stop the tape when the counter reaches a preset memory position approx.0:00:00 reading.

For example, this feature can be used to return the tape to a pre-selected position immediately after recording, or to repeatedly playback a certain portion of a tape.



1

Insert a cassette tape with its safety tab in place, if necessary, rewind or fast forward the tape to the point at which you want to begin recording.



2

If the counter is not set at 0:00:00, press COUNTER RESET button to reset to 0:00:00.



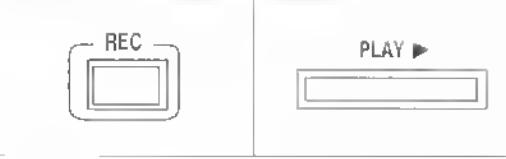
3

Press COUNTER MEMORY button so that "MEMORY" appears on the TV screen.



4

Press REC or PLAY button.



5

Press STOP button when recording or playback is completed.



6

(If the counter is not displayed, press SELECT button so that the counter appears on the VCR display or on the TV screen.) To activate the counter memory function, press REW button. The tape will automatically stop when the counter returns to 0:00:00.



To cancel the counter memory

When the counter appears on the display, press COUNTER MEMORY button so that "MEMORY" disappears from the TV screen.



AUTO REPEAT PLAYBACK

The VCR has an auto repeat function that allows you to repeat a tape indefinitely without touching the PLAY button.

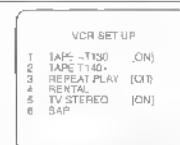
Note: If the "COUNTER MEMORY" is activated, auto repeat will not function.

1

Press MENU button on the remote control. The main menu appears on the TV screen.

2

Select item 2(VCR SET UP) with number button.



3

Select item 3(REPEAT PLAY) with number button. "ON" will appear next to repeat play.

4

Repeat playback will start automatically.

REPEAT PLAY ►



Once you select the repeat play mode, it stays in effect even after you turn off the VCR.

To exit the repeat play mode, repeat steps 1 to 3. "ON" will then disappear from the menu.

RENTAL PLAY

This function enables you to improve the picture quality when playing back worn cassettes such as those rented from a video shop.

1

Insert rental tape into VCR. VCR will automatically start tape playback.

2

Press MENU button on the remote control. The main menu appears on the TV screen.

3

Select item 2 (VCR SET UP) with number button.



5

Press SELECT button repeatedly to select "ON".

Once you select the rental play mode, it stays in effect even after you turn off the VCR.

To exit the rental play mode, repeat steps 1 to 4. Then, follow step 5, but select "OFF" for normal playback.



4

Select item 4(RENTAL) with number button.

Note:

You must change ON or OFF only in the Play mode.

SPECIAL FEATURES

Picture Search(SP/LP/SLP Mode)

You may view a video tape at a high speed in either a forward or reverse direction. This feature is useful in finding or skipping over a particular scene on a tape. In this mode, the sound will be muted.

Forward Direction:

When in the Play mode, press F.FWD button to view the tape at a fast speed in the forward direction.

Reverse Direction:

To view the tape at a fast speed in the reverse direction, press REW button in the Play mode.

For normal speed, simply press PLAY button.

Super High Speed Search (LP/SLP Mode)

For Picture Search in super high speed:

- 1) Press either F.FWD or REW button while the unit is in the Play mode.
- 2) Release button.
- 3) Depress it again. The unit will now search in super high speed.

For normal playback simply press PLAY button.

Vertical Hold Control

When the picture begins to vibrate vertically, adjust to stabilize the picture by pressing CHANNEL ▲ or ▼ button.

NOTES:

- This adjustment works only in the Still mode with CHANNEL ▲ or ▼ button.
- When the picture is distorted or rolling vertically, adjust vertical hold control on your TV.
- Some newer TV's do not have a user adjustable vertical hold control.

Still Picture During Playback

If you press PAUSE button during playback, the picture will "freeze" on the screen. You may use this feature to study details of a particular scene. Press PLAY button to continue playback.

NOTE: The VCR will automatically switch to the Stop mode, if it is left in the Pause mode for more than five minutes.

Tracking Adjustment

- Tracking adjustment will be set automatically (Digital Tracking function) when you start playback. "DTR" appears on the display.
- When playing pre-recorded tapes or tapes recorded on units other than your own, noise lines (black and white streaks) may appear on the playback picture. If this occurs, adjust the tracking control by pressing CHANNEL ▲ or ▼ button until the streaks disappear. To return to the DTR function, stop the tape once and start playback again.
- To set center position, press both CHANNEL ▲ and ▼ button at the same time.
NOTE: This function is controlled only by the buttons on the VCR. The buttons on the remote control will not adjust tracking.

Slow Tracking

- You can reduce the noise lines by pressing CHANNEL ▲ or ▼ button in slow mode, too. But you cannot set center position in slow mode, and slow tracking adjustment will not be set automatically.

Note: Press SLOW button in Still mode and press CHANNEL ▲ or ▼ button until the streaks disappear. To return to Still mode, press PAUSE/ STILL button again.

This enables you to see the picture in its entirety without distracting noise lines.

Auto Rewind

When the end of a tape is reached during recording, playback, or fast-forward, the tape will automatically rewind to the beginning (or to the 0:00:00 counter reading if the memory function is activated), eject, and the VCR will turn off.

NOTES:

- The tape will not auto-rewind during timer recording or One Touch Recording.
- When the tape is rewound to the preset memory position, the tape will not eject and the VCR will not turn off.

Slow Motion

Press SLOW button to reduce the playback speed. The VCR mutes the sound during slow motion. You can control the speed by pressing SLOW + button (faster) or SLOW - button (slower).

Press PLAY button to return to normal playback.

VIDEO CASSETTE TAPE

This VCR will operate with any cassette that has the VHS mark. For best results we recommend the use of high-quality tapes.

- Do not use poor quality or damaged tapes.

The table below shows the recording/playback time using T-60, T-120 or T-160 tapes in the SP, LP or SLP mode.

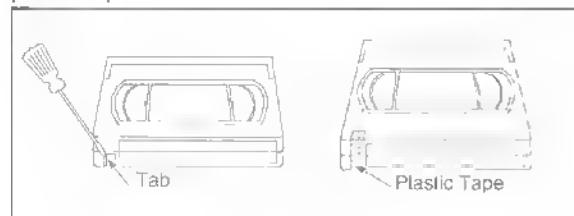
MODE	CASSETTE		
	T-60	T-120	T-160
SP Mode	1 hour	2 hours	2-2/3 hours
LP Mode	2 hours	4 hours	5-1/3 hours
SLP Mode	3 hours	6 hours	8 hours

When handling video tapes, follow the precautions below:

- Avoid moisture, which can condense on the tape if it is moved from a cold place to a warm place. Playing a tape that has moisture in it will damage the tape and your VCR. Before using a tape with these conditions, wait until the tape has warmed to room temperature and the moisture has evaporated.
- Avoid extreme heat, high humidity and magnetic fields.
- Do not tamper with the cassette mechanism.
- Do not touch the tape with your fingers.

ERASE PREVENTION

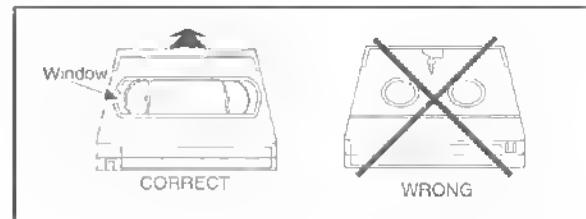
You may prevent accidental erasing of a tape by breaking off the tab on the back edge of the cassette. If you decide to record on the tape again, cover the hole with plastic tape.



INSERTING A CASSETTE

Insert the cassette in the direction as shown. Push in gently, but continuously, on the center-back of the cassette until it is drawn into the VCR.

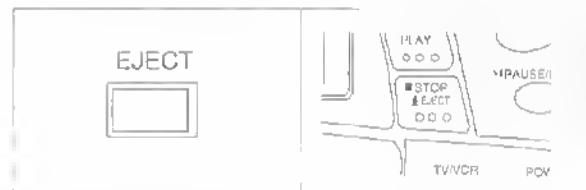
The VCR will automatically turn on, and cassette-in indicator will light when the cassette is properly inserted.



REMOVING A CASSETTE

1

Press EJECT button on the unit or on the remote control.



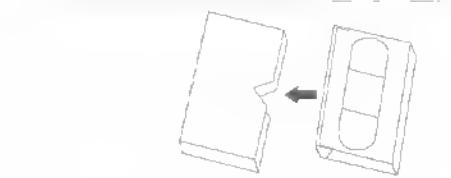
2

When the cassette-in indicator goes off and the cassette stops moving, pull the cassette out of the cassette compartment and store it properly.



3

Store the cassette in its case as shown.



TROUBLESHOOTING GUIDE

If you have followed the instructions contained in this manual and have difficulty in operating your VCR, locate the SYMPTOM in the left column below. Check the corresponding POSSIBLE CAUSE and CORRECTIVE ACTION columns to remedy the problem.

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
No power.	<ul style="list-style-type: none">Power cord is not connected.POWER button is set to off position.	<ul style="list-style-type: none">Connect power cord to AC outlet.Set the POWER button to on position.
Timer recording is not possible.	<ul style="list-style-type: none">The timer recording is set incorrectly.The timer recording is not set to on position.VCR clock is not set correctly.	<ul style="list-style-type: none">Set the timer recording correctly.Set TIMER REC to on position.Set VCR clock correctly.
Cannot go into record mode.	<ul style="list-style-type: none">The record safety tab on cassette is missing.	<ul style="list-style-type: none">Place vinyl tape over missing safety tab.
No picture or poor picture on playback.	<ul style="list-style-type: none">The TV channel selector is not set to the proper channel.The TV fine tuning is not set correctly.	<ul style="list-style-type: none">On playback, set the TV to channel 3 or 4 for video output channel.Fine tune your TV.
Noise in picture on playback.	<ul style="list-style-type: none">Video heads are dirty.	<ul style="list-style-type: none">Head cleaning is necessary, consult the nearest Funai Authorized Service Center.
No picture on TV.	<ul style="list-style-type: none">The VCR is in TV mode.	<ul style="list-style-type: none">Press TV/VCR button.
Playback picture is partially noisy.	<ul style="list-style-type: none">The TRACKING control is not set correctly.	<ul style="list-style-type: none">Adjust TRACKING control for a better picture.
On-the-air TV programs cannot be seen.	<ul style="list-style-type: none">Connections are not correctly made.	<ul style="list-style-type: none">Re-check the ANT. IN and ANT. OUT connections.
No operation by infrared Remote Control.	<ul style="list-style-type: none">Weak batteries.	<ul style="list-style-type: none">Check the batteries in Infrared Remote Control.

MAINTENANCE

CABINET CLEANING

- Wipe the front panel and other exterior surfaces of the VCR with a soft cloth immersed in lukewarm water and wrung dry.
- Never use a solvent or alcohol. Do not spray insecticide liquid near the VCR. Such chemicals may cause damage and discoloration to the exposed surfaces.

HEAD CLEANING

- Picture playback may become blurred or interrupted while the TV program received is clear. This does not mean that the recorded program has been erased. Dirt accumulated on the heads after long periods of use, or usage of rental or old tapes can cause this problem. In this case, head cleaning requires highly technical attention, therefore consult the nearest Funai Authorized Service Center. Clean heads only when problems occur.

SERVICING

- Should your VCR become inoperative, do not try to correct the problem by yourself. There are no user-serviceable parts inside. Turn off, unplug the power cord, and take the unit to Funai Authorized Service Center for servicing.

SPECIFICATIONS

GENERAL SPECIFICATIONS

Television system	: NTSC, TV standard
Video head	: Rotary 4-head Double Azimuth Video System
Tape width	: 1/2inch (12.65mm)
Tape speed	
SP	: 33.35mm/sec.
LP	: 16.67mm/sec.
SLP	: 11.12mm/sec.
Tuner channel	
VHF	: #2~#13
UHF	: #14~#69
Cable channel	: 5A, A-5 ~ A-1, A ~ W+84
RF converter	: Built-in VHF converter
Converter output	: VHF Channel 3 or 4.
Timer indication	: AM/PM 12-hour system
Operating temperature	: 5°C~40°C (41°F~104°F)
Terminals	
Antenna input	: F type connector x 1
Antenna output	: F type connector x 1
Video input	: RCA connector x 2
Video output	: RCA connector x 1
Audio input	: RCA connector x 4
Audio output	: RCA connector x 2

ELECTRICAL SPECIFICATIONS

Video output level	: 1Vp-p
Video output impedance	: 75Ω
Audio output level	: -6dBv (1KHz)
Video input level	: 0.5~2.0Vp-p
Audio input level	: -10dBv
Video S/N ratio	
SP	: More than 42dB
Audio S/N ratio	
SP (Normal audio track)	: More than 38dB

OTHER SPECIFICATIONS

Power requirement	: 120V, 60Hz
Power consumption	: 20 Watts
Dimensions	: W 14-1/4" (360mm) H 3-5/8" (92mm) D 10" (252mm)
Weight	: 7.0lbs. (3.2 Kg.) (Approx.)
Accessories, included	: Remote control unit 2 "AA" Batteries Owner's Manual Coaxial cable Quick Guide

• Designs and specifications are subject to change without notice and without our legal obligation.

CABLE CHANNEL DESIGNATIONS

This model is capable of receiving 125 cable channels. The channels are displayed as 1-125.

Cable companies often designate channels with letters or letter-number combinations. Please check with your local cable company. The following is a chart of common cable channel designations.

CATV Channel	5A	2	3	4	5	6	7	8	9	10	11	12	13	A	B
VCR Display	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CATV Channel	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
VCR Display	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
CATV Channel	R	S	T	U	V	W	W+1	W+2	W+3	W+4	W+5	W+6	W+7	W+8	W+9
VCR Display	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
CATV Channel	W+10	W+11	W+12	W+13	W+14	W+15	W+16	W+17	W+18	W+19	W+20	W+21	W+22	W+23	W+24
VCR Display	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
CATV Channel	W+25	W+26	W+27	W+28	W+29	W+30	W+31	W+32	W+33	W+34	W+35	W+36	W+37	W+38	W+39
VCR Display	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
CATV Channel	W+40	W+41	W+42	W+43	W+44	W+45	W+46	W+47	W+48	W+49	W+50	W+51	W+52	W+53	W+54
VCR Display	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
CATV Channel	W+55	W+56	W+57	W+58	A-5	A-4	A-3	A-2	A-1	W+59	W+60	W+61	W+62	W+63	W+64
VCR Display	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
CATV Channel	W+65	W+66	W+67	W+68	W+69	W+70	W+71	W+72	W+73	W+74	W+75	W+76	W+77	W+78	W+79
VCR Display	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
CATV Channel	W+80	W+81	W+82	W+83	W+84										
VCR Display	121	122	123	124	125										

FUNAI CORPORATION

LIMITED WARRANTY

FUNAI CORP. will repair this product, free of charge in the USA in the event of defect in materials or workmanship as follows:

DURATION:

PARTS: FUNAI CORP. will provide parts to replace defective parts without charge for one (1) year from the date of original retail purchase. Two (2) years for Picture Tube. Certain parts are excluded from this warranty.

LABOR: FUNAI CORP. will provide the labor without charge for a period of ninety (90) days from the date of original retail purchase.

LIMITS AND EXCLUSIONS:

This warranty is extended only to the original retail purchaser. A purchase receipt or other proof of original retail purchase will be required together with the product to obtain service under this warranty.

This warranty shall not be extended to any other person or transferee.

This warranty is void and of no effect if any serial numbers on the product are altered, replaced, defaced or missing. This FUNAI CORPORATION Limited warranty does not apply to any product not purchased and used in the United States.

This warranty only covers failures due to defects in material or workmanship which occur during normal use. It does not cover damage which occurs in shipment, or failures which are caused by repairs, alterations or product not supplied by FUNAI CORP., or damage which results from accident, misuse, abuse, mishandling, misapplication, alteration, faulty installation, improper maintenance, commercial use such as hotel, rental or office use of this product or damage which results from fire, flood, lightning or other acts of God.

THIS WARRANTY DOES NOT COVER PACKING MATERIALS, ANY ACCESSORIES (EXCEPT REMOTE CONTROL), ANY CONSUMABLE PARTS, FLIMMERTUBE ASSEMBLY PARTS, DEMO OR FLOOR MODELS.

FUNAI CORP. AND ITS REPRESENTATIVES OR AGENTS SHALL IN NO EVENT BE LIABLE FOR ANY GENERAL, INDIRECT OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR OCCASIONED BY THE USE OF OR THE INABILITY TO USE THIS PRODUCT. THIS WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND IF ALL OTHER LIABILITIES IN THE PART OF FUNAI, ALL OTHER WARRANTIES INCLUDING THE WARRANTY OF MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED BY FUNAI AND ITS REPRESENTATIVES IN THE UNITED STATES. ALL WARRANTY INSPECTIONS AND REPAIRS MUST BE PERFORMED BY FUNAI AUTHORIZED SERVICE CENTER. THIS WARRANTY IS VALID WHILE THE UNIT IS CARRIED IN TO FUNAI AUTHORIZED SERVICE FACILITY.

WHEN YOU ARE RETURNING THE PRODUCT FOR SERVICE TO THE FACTORY SERVICE CENTER, PLEASE CONTACT THE FUNAI SERVICE DEPARTMENT TO RECEIVE M.R.A. (MERCHANDISE RETURN AUTHORIZATION) NUMBER PRIOR TO SHIPPING. ANY POSTAGE, INSURANCE AND SHIPPING COSTS INCURRED IN PRESENTING OR SENDING YOUR FUNAI/SYMPHONIC PRODUCT FOR SERVICE ARE SHIPPER'S RESPONSIBILITY.

CAREFULLY PACK WITH PROPER PACKING MATERIALS, PREFERABLY IN THE ORIGINAL CARTON.

ATTACH WRITTEN DOCUMENTATION DETAILING THE COMPLAINT, TO THE OUTSIDE OR INSIDE OF THE CARTON.

THE PRODUCT MUST BE ACCOMPANIED BY A COPY OF THE ORIGINAL RETAIL PURCHASE RECEIPT. IF NO PROOF OF PURCHASE IS ATTACHED, THE WARRANTY WILL NOT BE HONORED AND REPAIRS COSTS WILL BE CHARGED.

IMPORTANT:

THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE. IF, AT ANY TIME DURING THE WARRANTY PERIOD, YOU ARE UNABLE TO OBTAIN SATISFACTION WITH THE REPAIR OF THIS PRODUCT, PLEASE CONTACT FUNAI CORP.

ATTENTION:

FUNAI CORP. RESERVES THE RIGHT TO MODIFY ANY DESIGN OF THIS PRODUCT WITHOUT PRIOR NOTICE.

For information of your nearest FUNAI Authorized Service Center or general service procedure, please call or write to the following:

FUNAI CORPORATION
Factory Service Center
100 North Street, Teterboro, NJ 07608
Tel :800-242-7158
(Eastern Time 9:00 AM - 4:30 PM)